

Figure 1: Self Addressing Microlocations
(Microlithographic Fabrication)

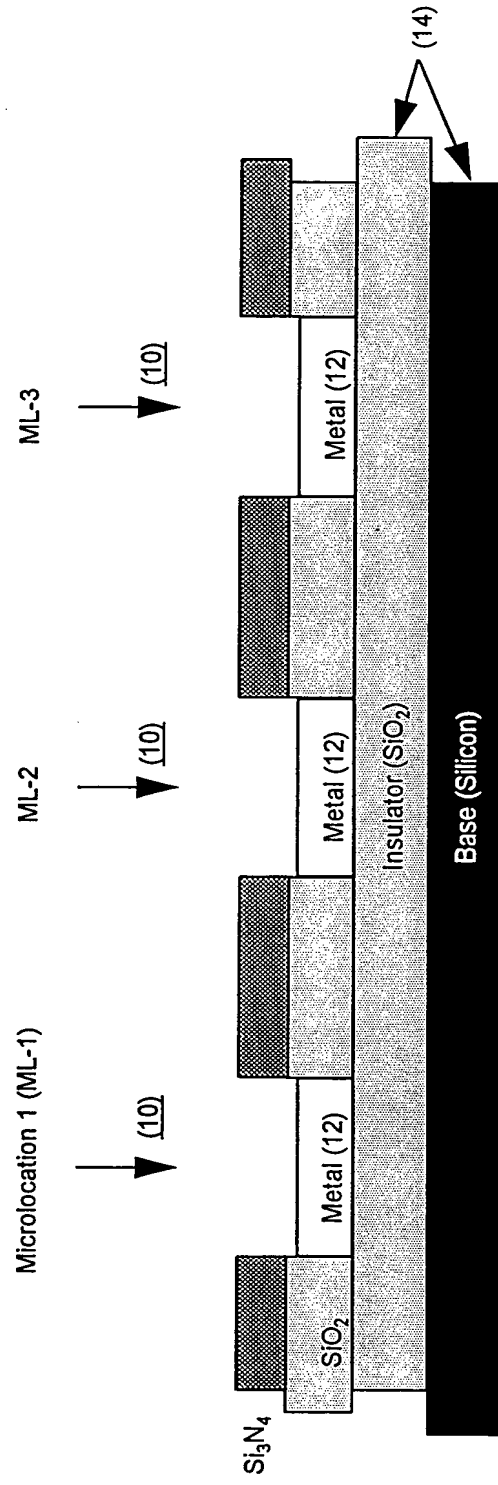


Figure 2: Microlocation Design Features

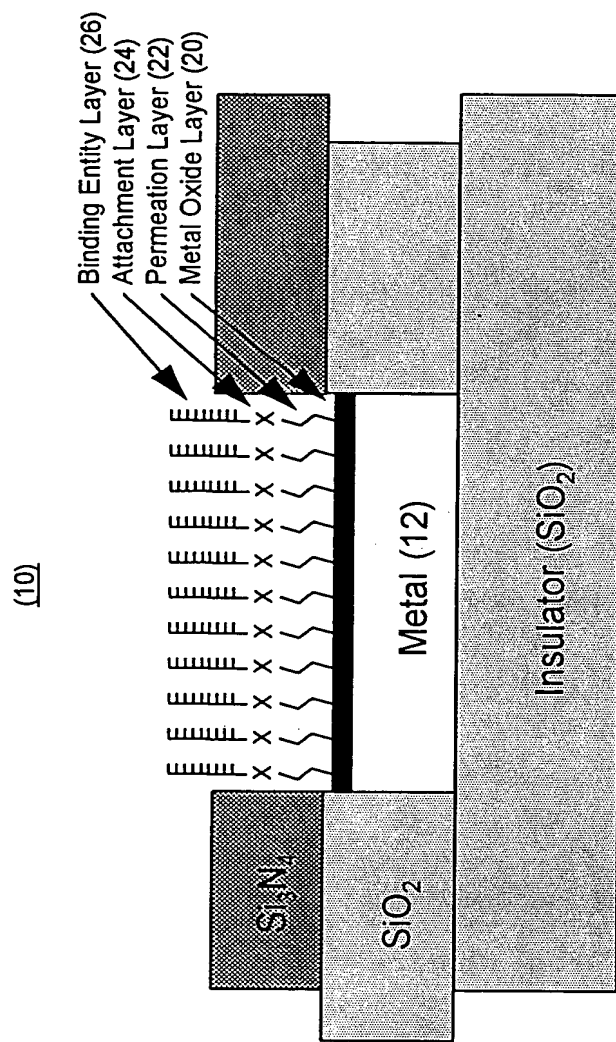


Figure 3: Self-Addressable 64 Microlocation Chip

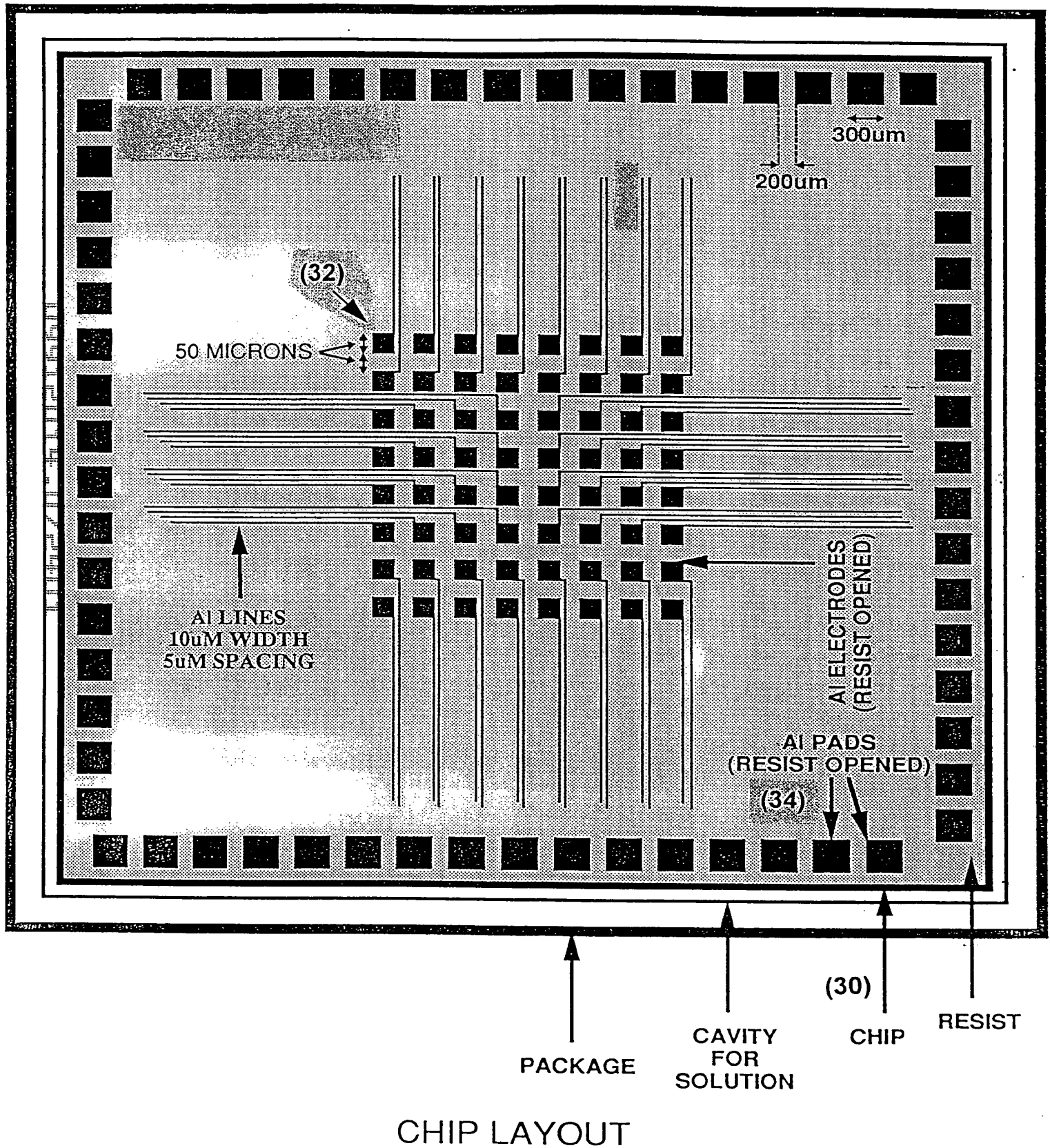


Figure 4: DNA Attachment Chemistry

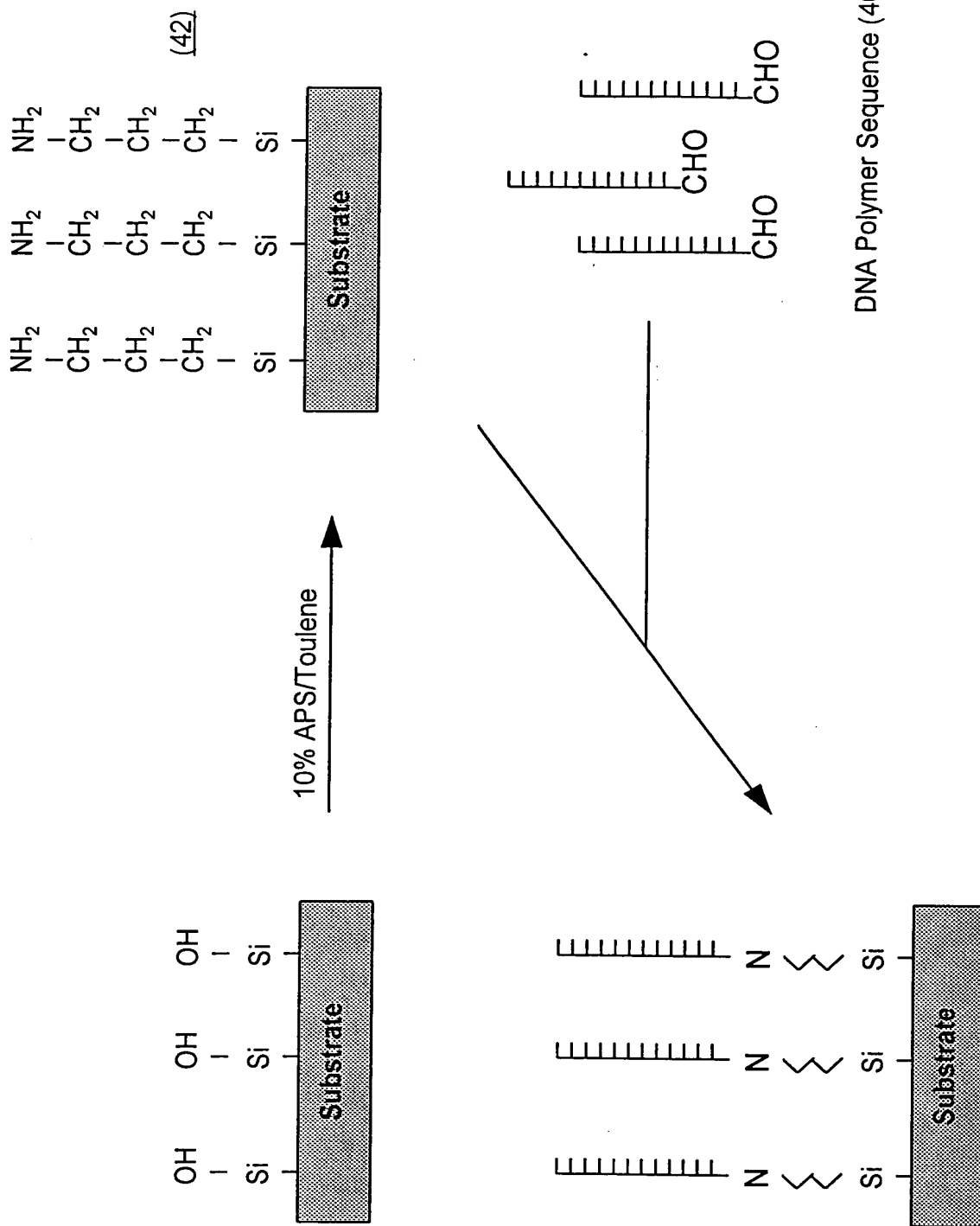


Figure 5: Micro-Machined Device (Exploded View)

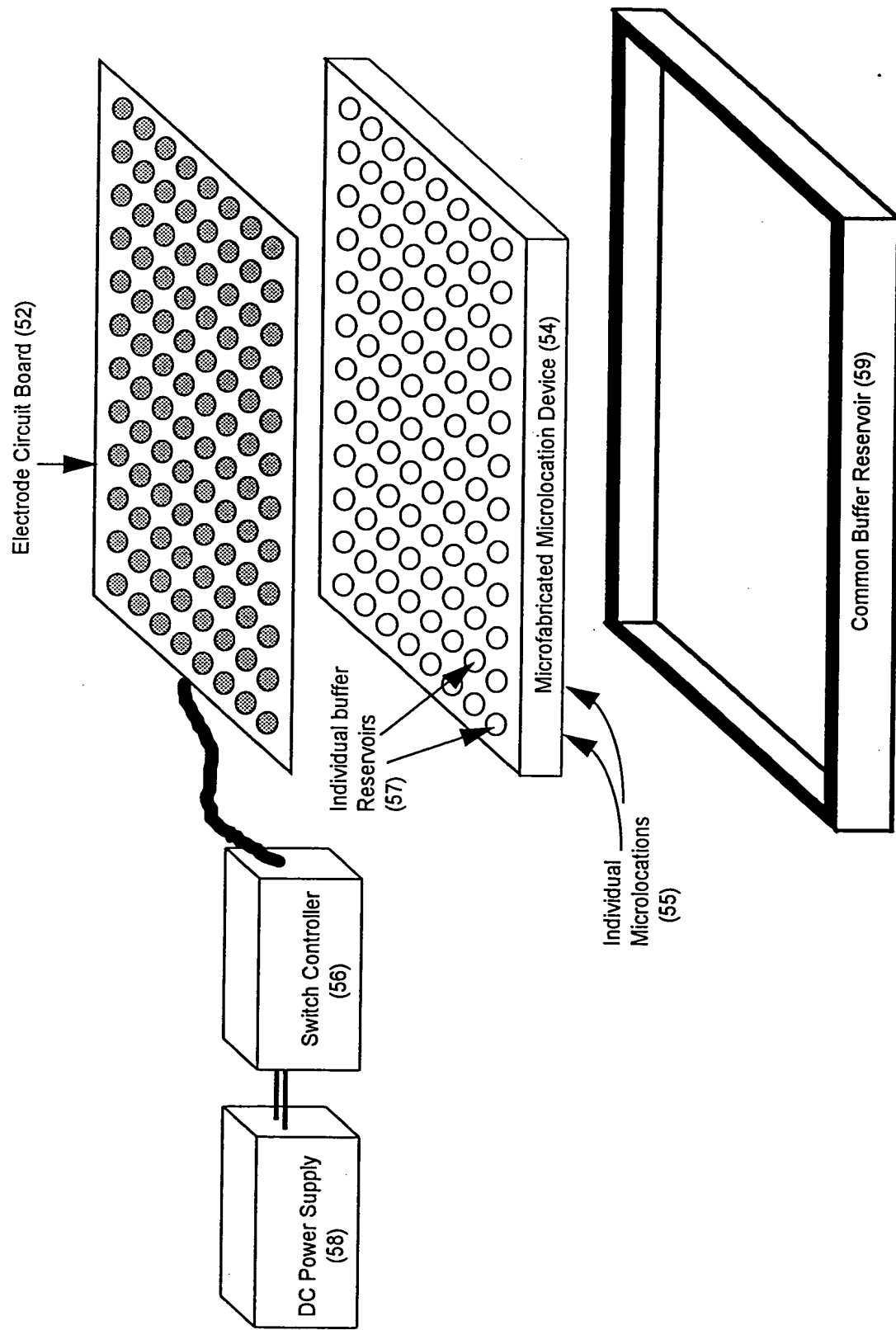


Figure 6: Micro-Machined Device (Cross-Section)

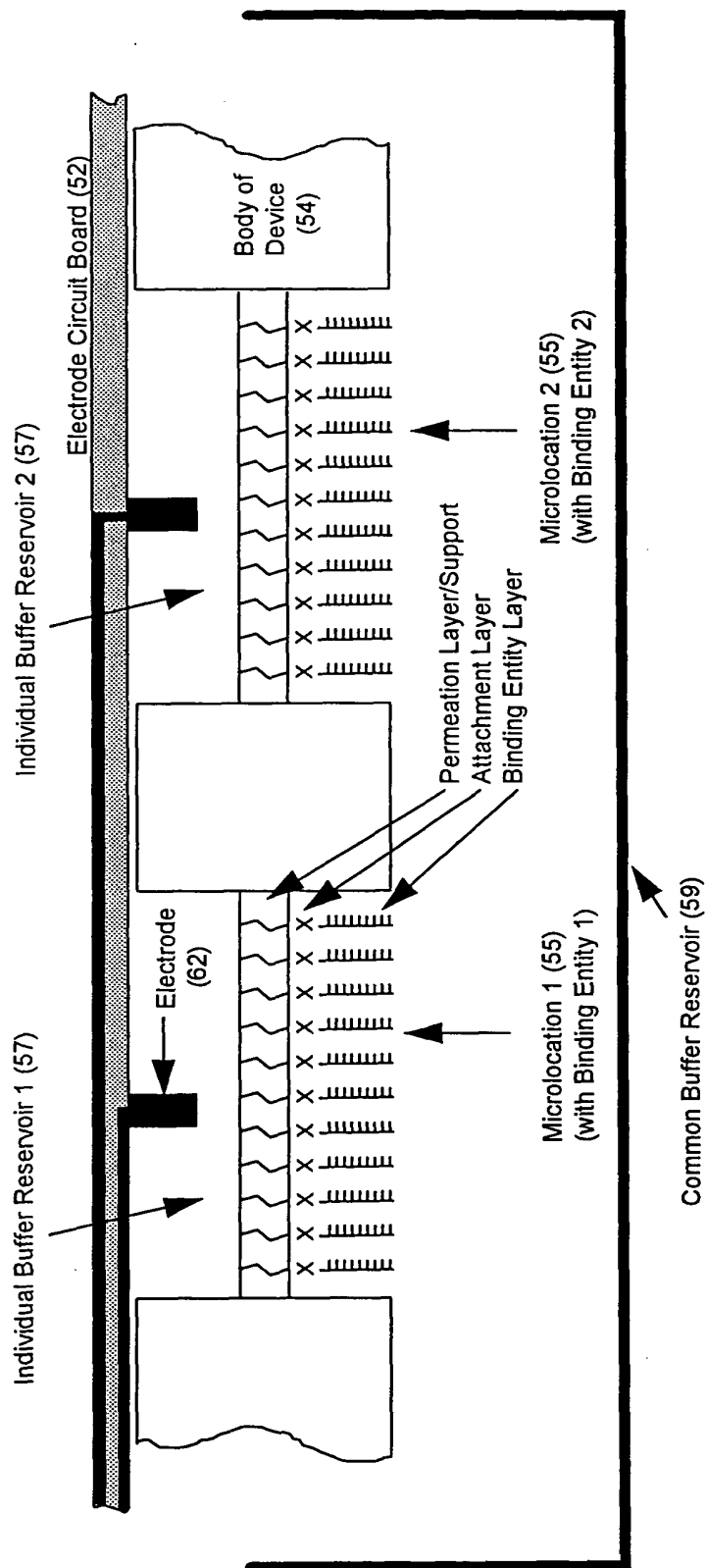


Figure 7: Electronically Controlled Concentration Effect

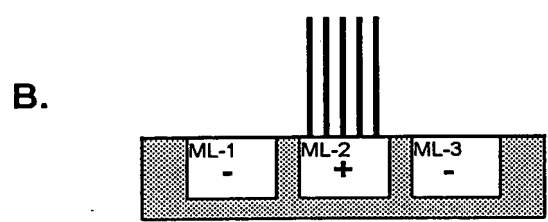
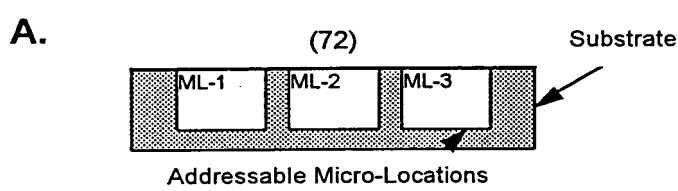
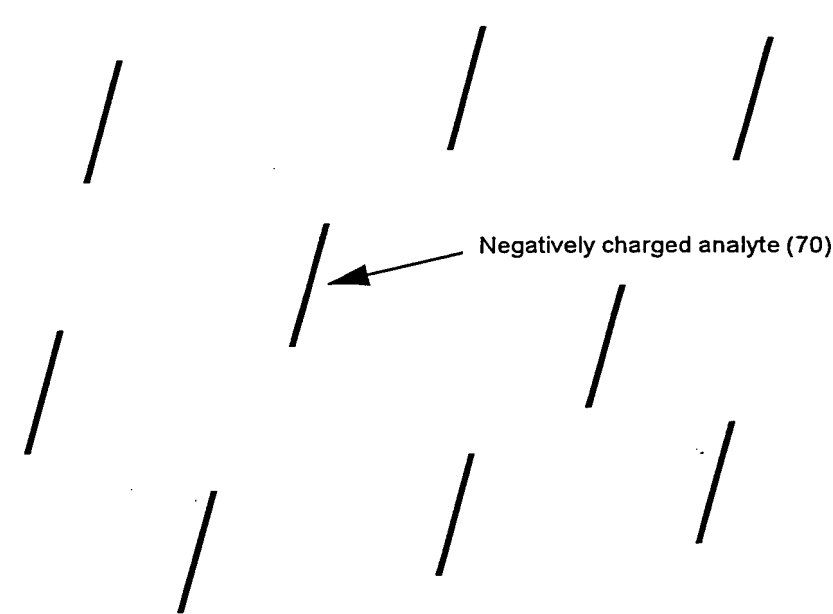
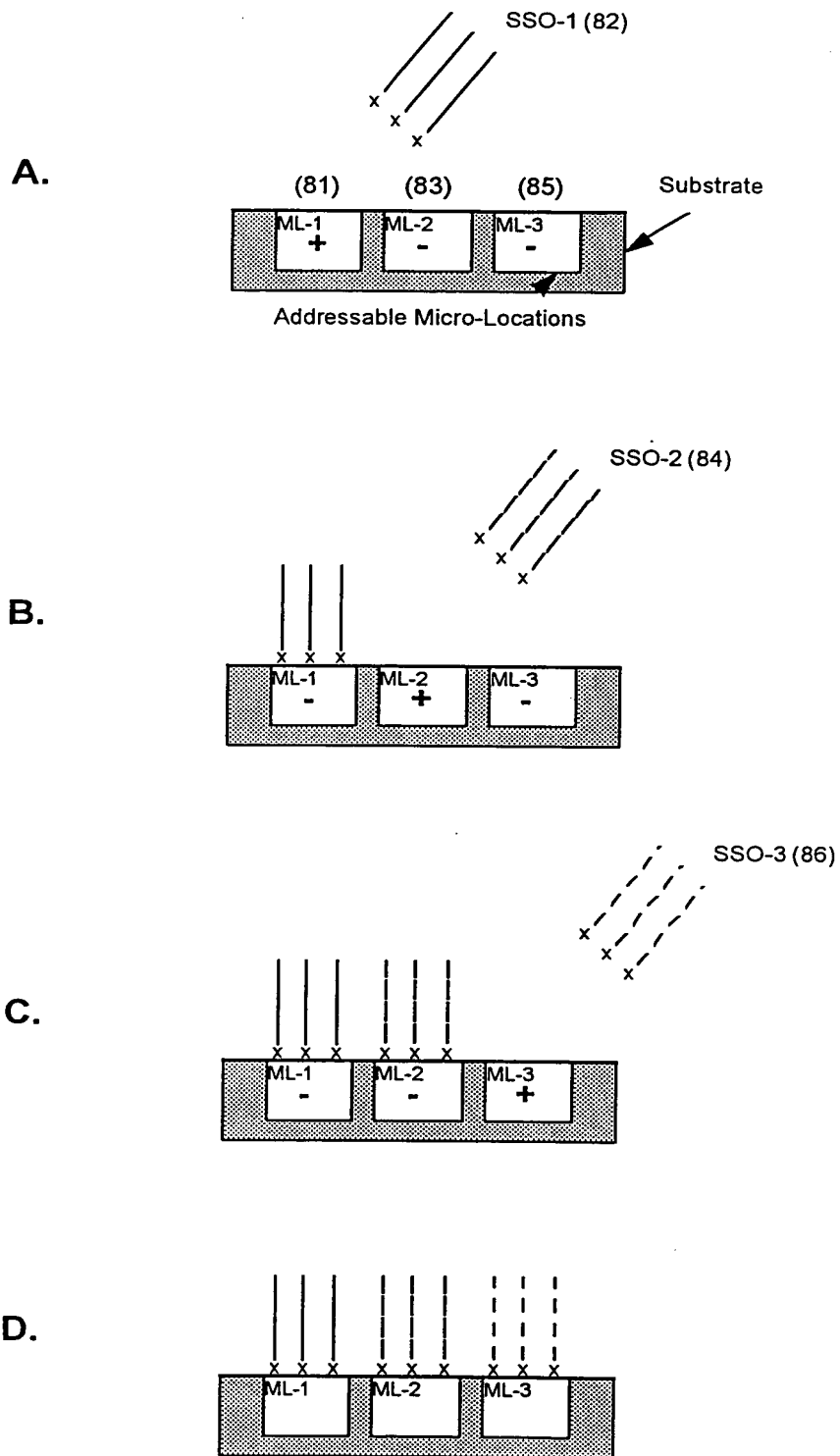


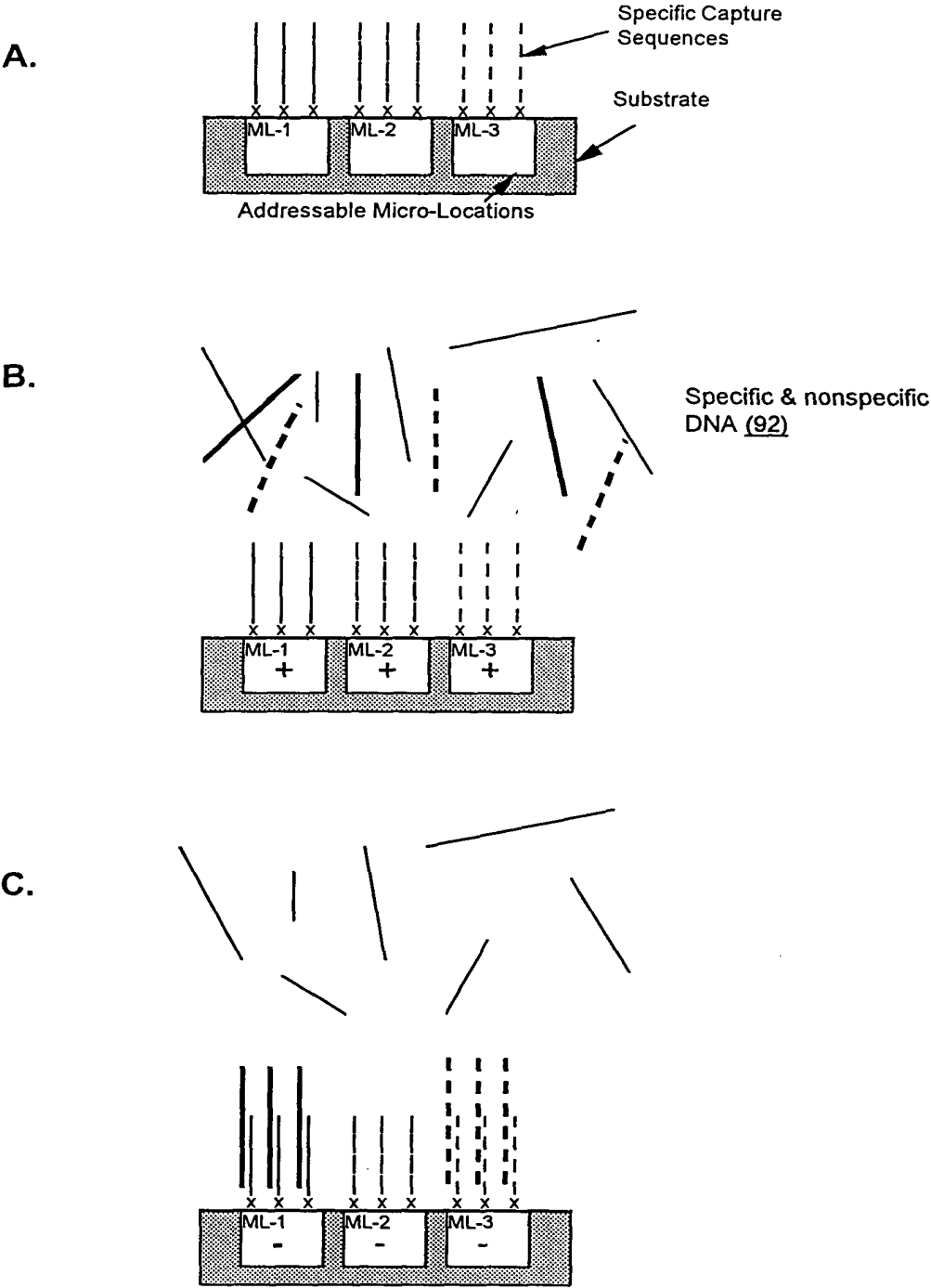
Figure 8: Electronic Addressing and Self-Directed Assembly of Device.



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Figure 9: Electronically Controlled Hybridization Process

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Figure 10: Electronically Directed Serial Hybridization Process

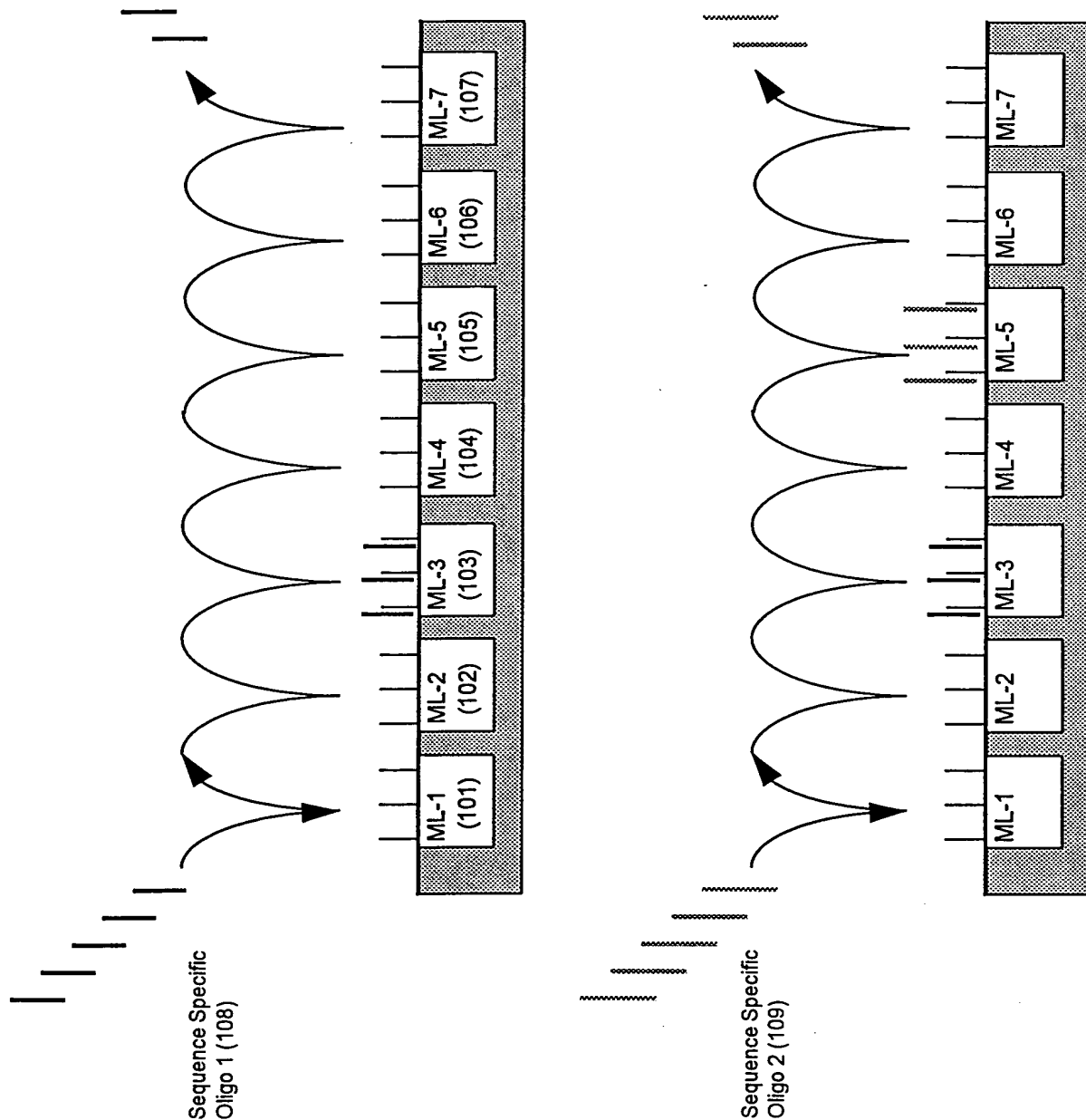


Figure 11: Electronic Stringency Control (ESC) of Hybridization Process

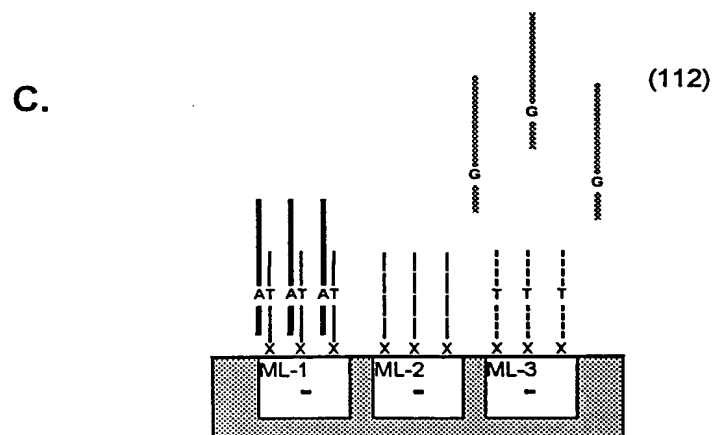
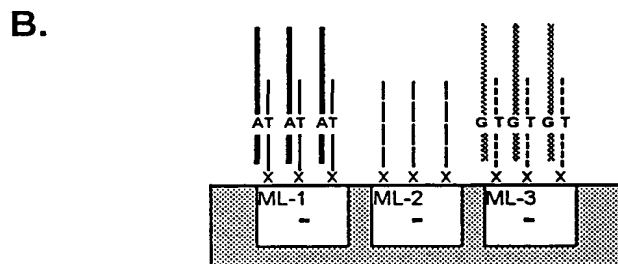
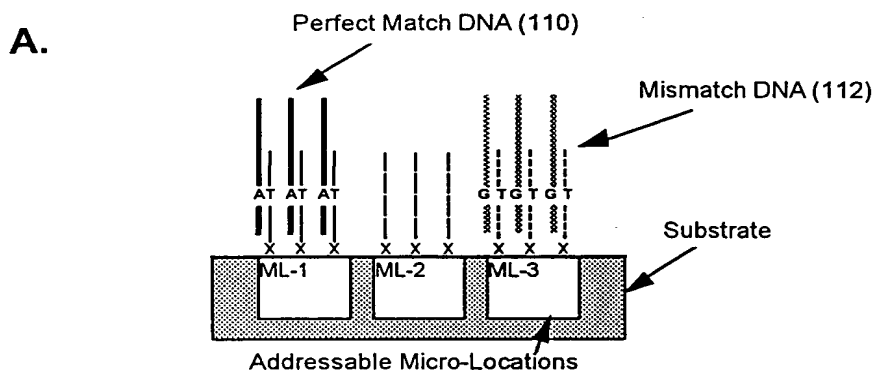


Figure 12: Electronically Controlled Fluorescent Dye Detection Process

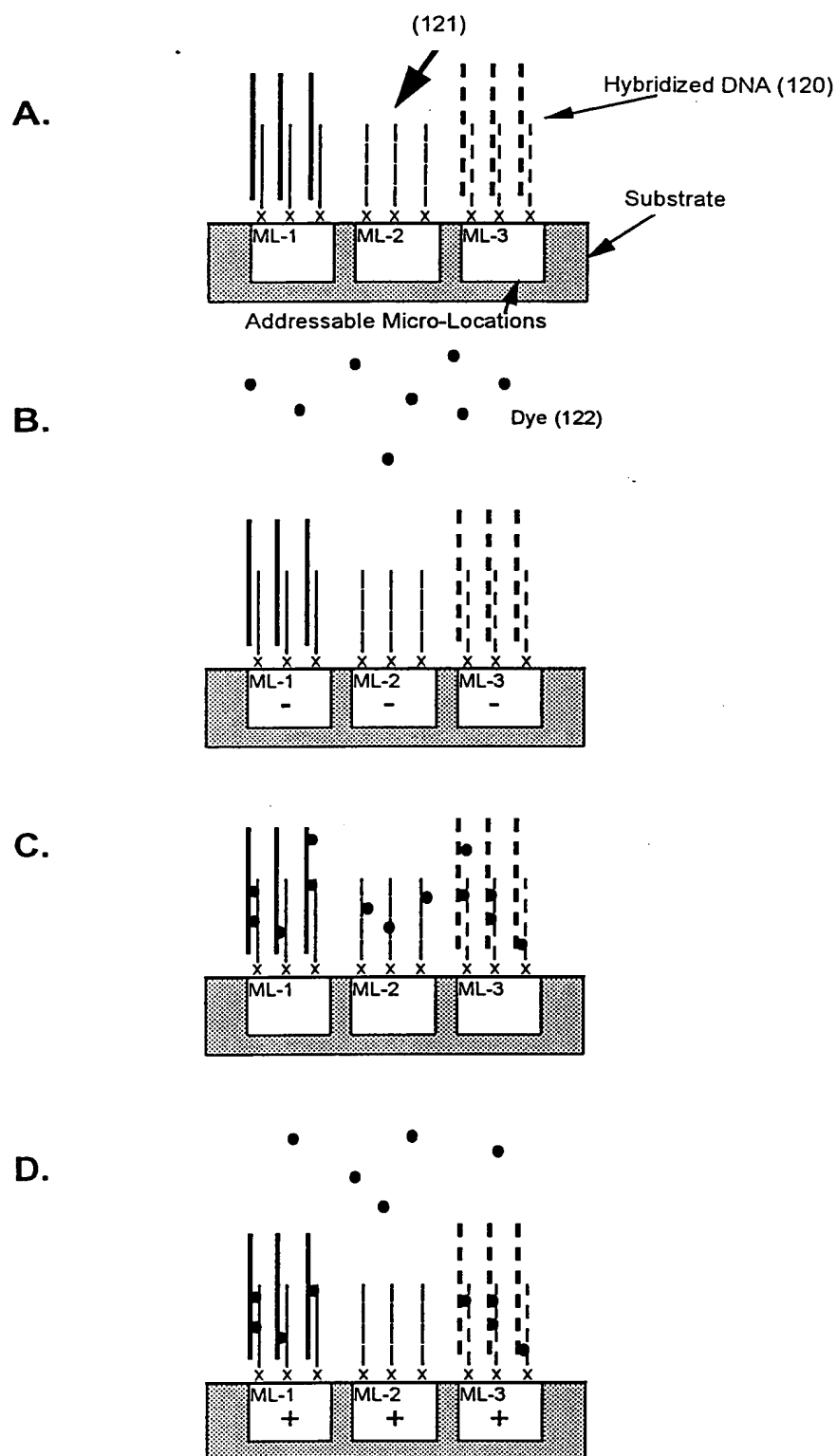


Figure 13: Electronically Controlled Template Replication

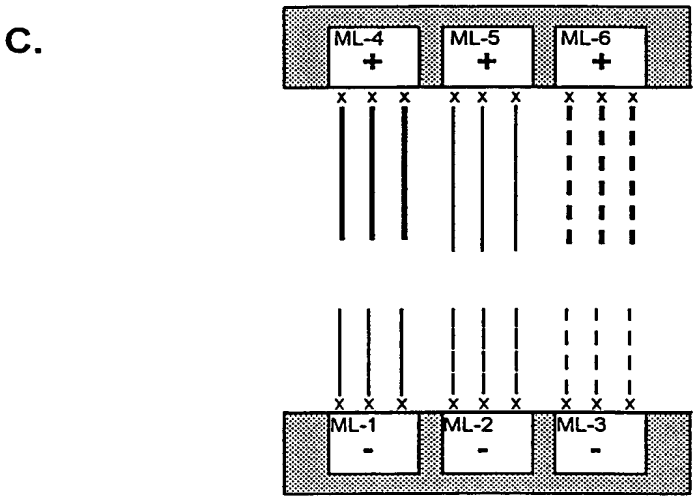
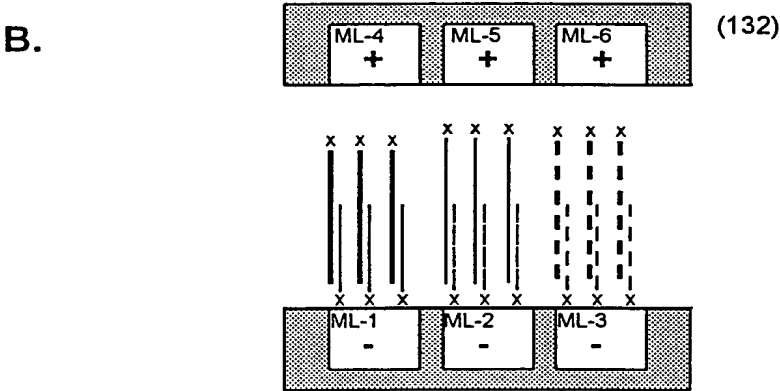
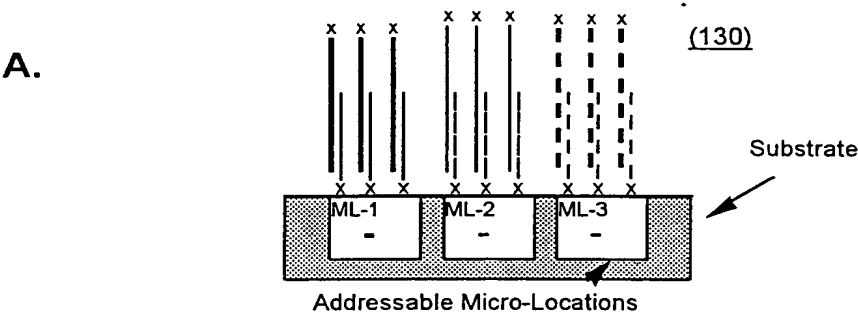
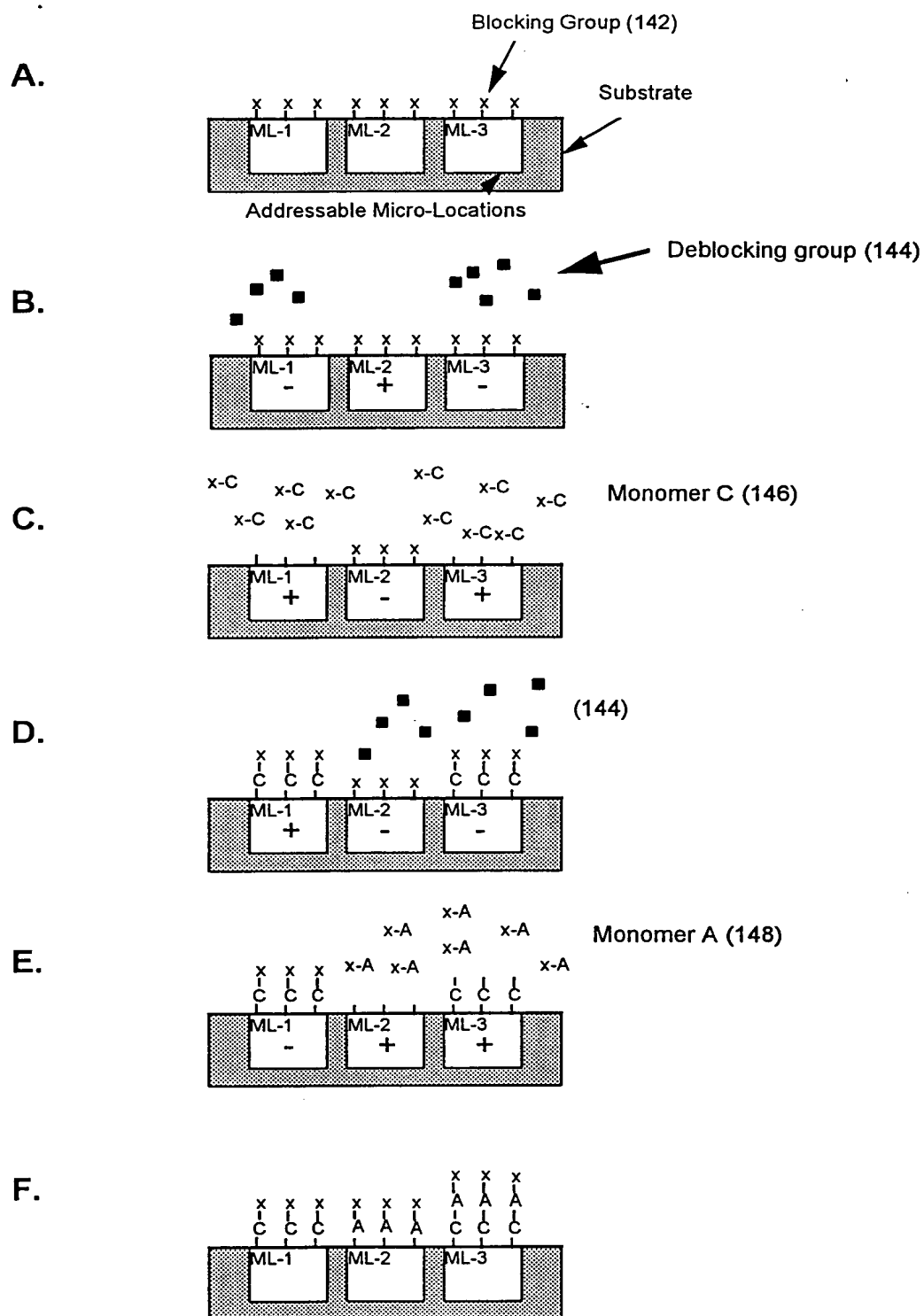


Figure 14: Electronically Directed Combinatorial Synthesis.



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Relative Sensitivity for Mismatch Discrimination

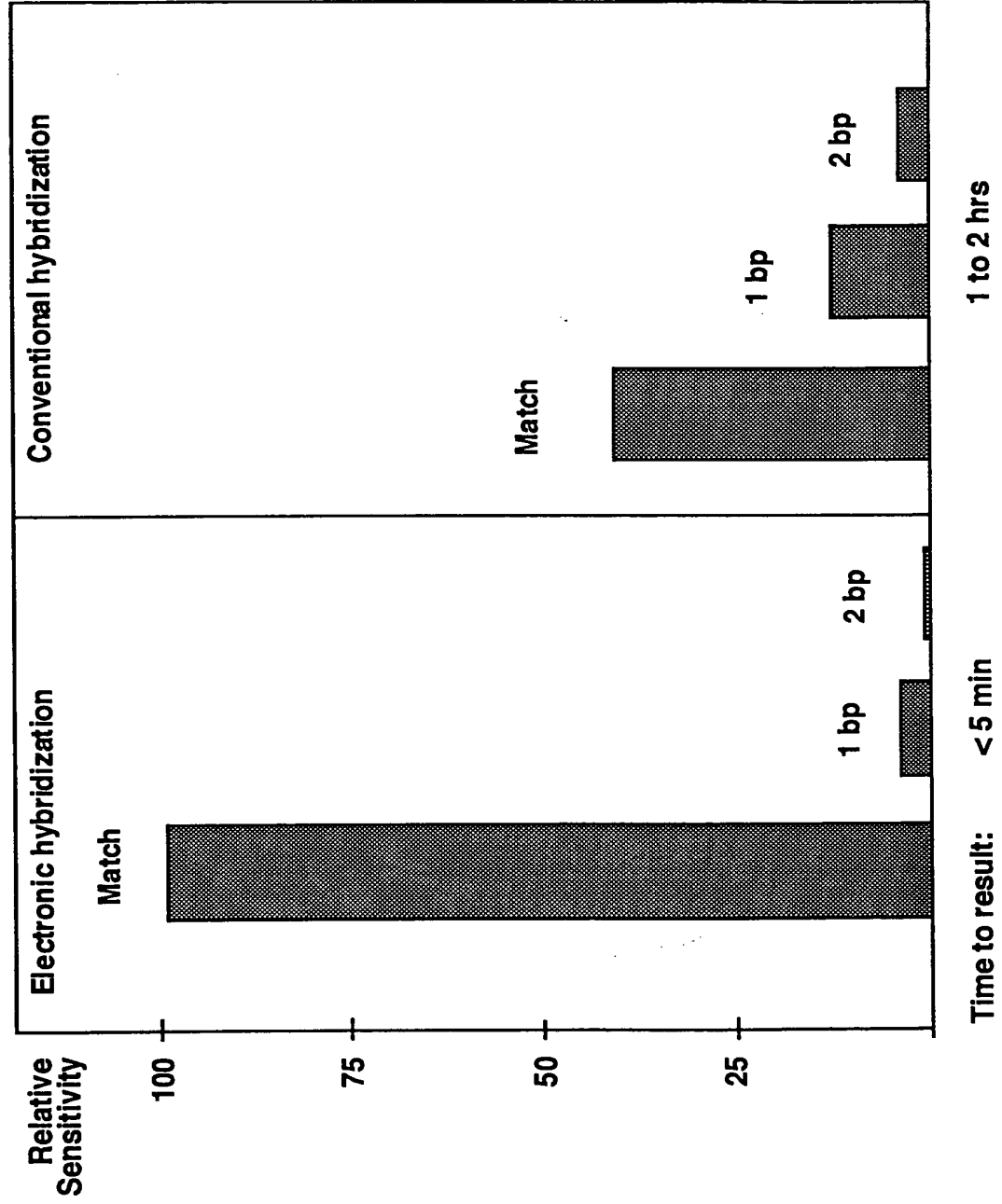
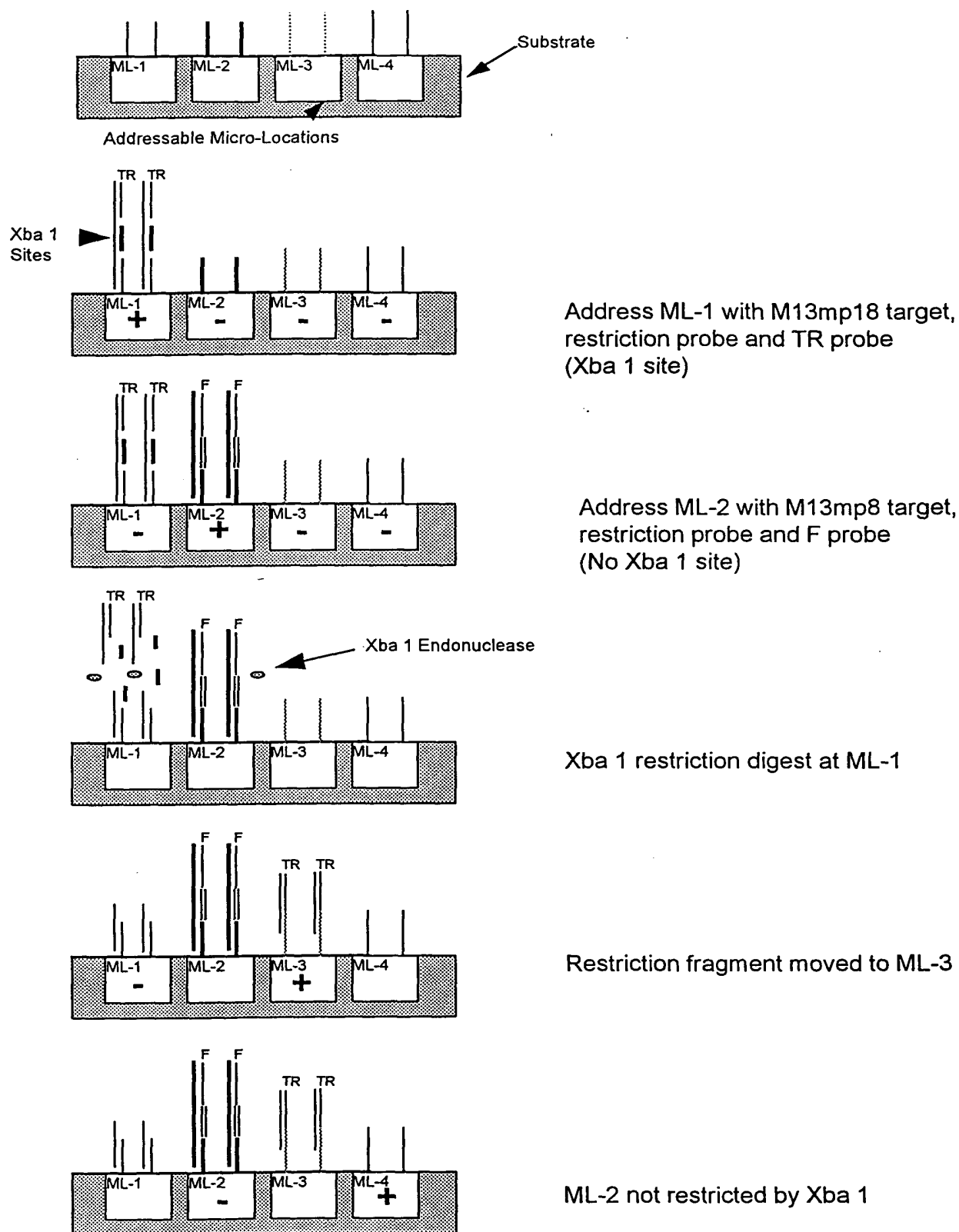


Figure 16

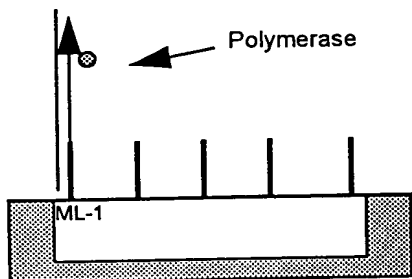
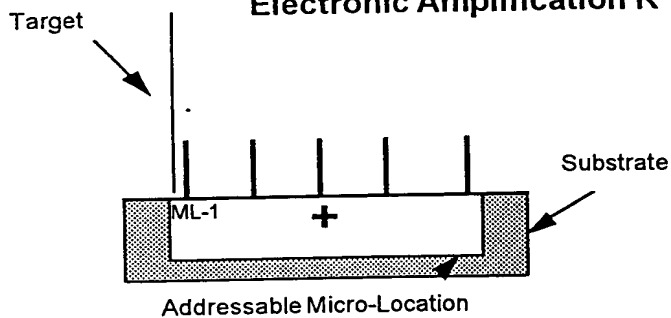
Electronic Restriction Cleavage



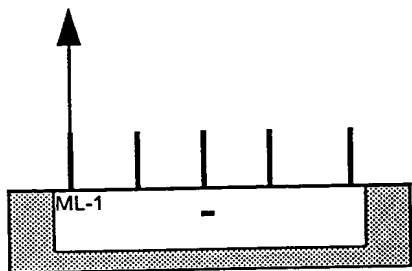
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Figure 17

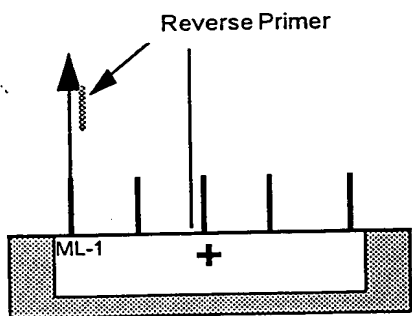
Electronic Amplification Reactions



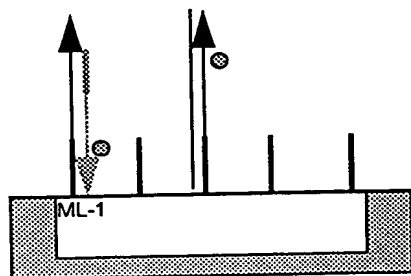
DNA polymerase extends capture sequence



Target electronically denatured



Reverse primer and target hybridized



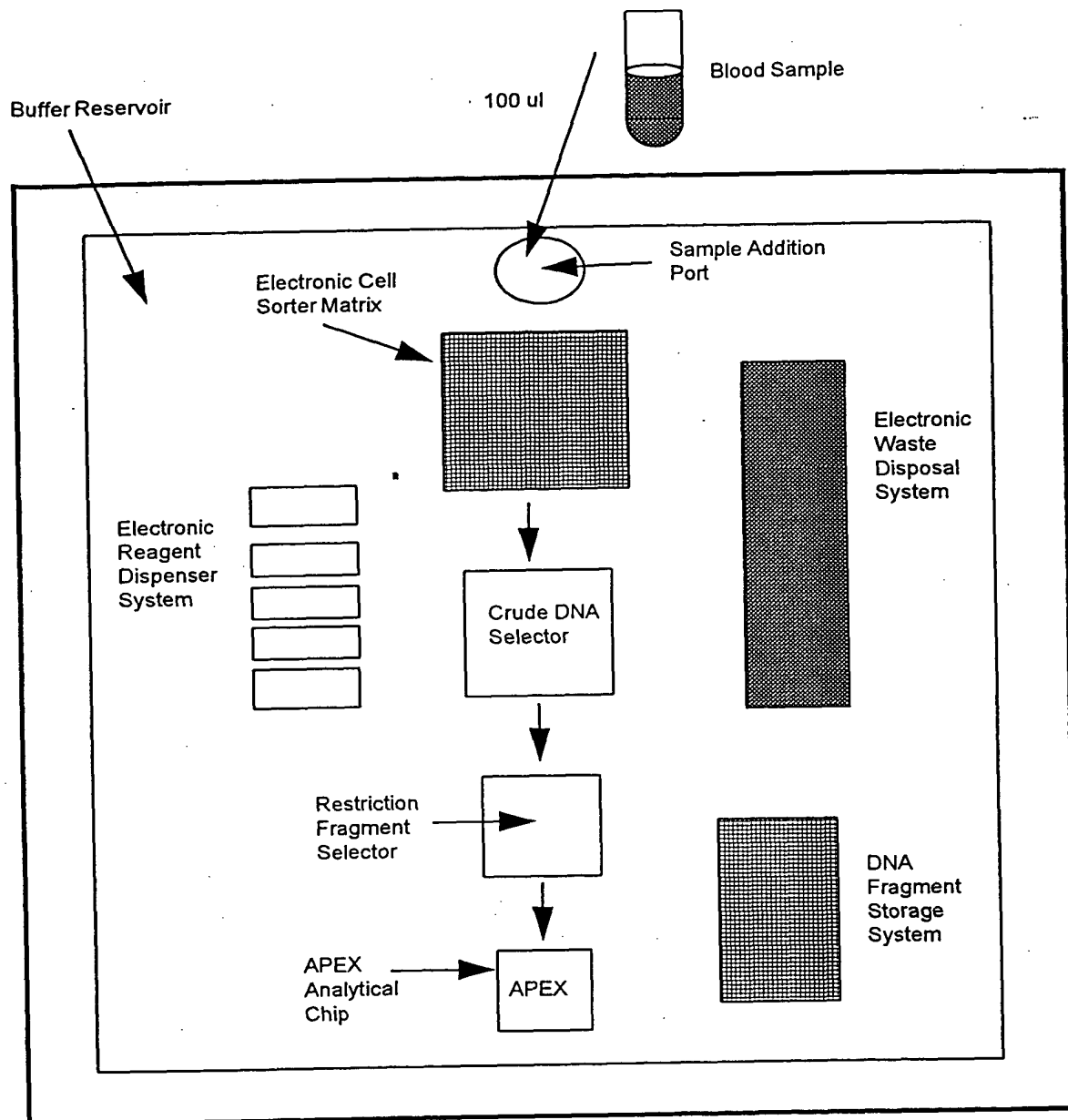
Extension by DNA polymerase

repeat n times

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Figure 18

Complete APEX System with Sample Preparation



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